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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,547	09/17/2001	Mark Greenberg	04259P076	9819

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Thomas C. Webster
BLAKELY SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER

CHUNG, PHUNG M

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 11/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/955,547

Applicant(s)

GREENBERG ET AL.

Examiner

Phung My Chung

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE and IDS's dated 5/17/04 and 8/3/04.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5 and 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Claims 4, 13 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 4, lines 2-3, "a multiplexer to select between said predetermined maximum value and said new path metric value" is not clear as to what it meant because the new path metric value or the first path metric value is the same as the predetermined maximum value (see claim 1, line 6).

As per claim 13, lines 2-3, "configuring a multiplexer to select between said predetermined maximum value and said new path metric value" is not clear as to what it meant because the new path metric value or the first path metric value is the same as the predetermined maximum value (see claim 10, lines 6-7).

As per claim 22, lines 3-4, "a multiplexer to select between said predetermined maximum value and said new path metric value" is not clear as to what it meant because the new path metric value or the first path metric value is the predetermined maximum value (see claim 19, line 7).

Appropriate correction is required.

2. Claims 5, 14 and 23 are objected to because of the following informalities:

As per claim 5, line 2, "may be" a positive term should be used.

As per claim 14, line 2, "may be" a positive term should be used.

As per claim 23, line 2 "may be" a positive term should be used.

Appropriate correction is required.

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 10-14 and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Bree et al ("A Bit-Serial Architecture for a VLSI Viterbi Processor" 1988 IEEE pgs. 72-75).

As per claim 1, Bree et al disclose the invention substantially as claimed, comprising:

A first adder to add a first branch metric value (BMV) to a previous path metric value (PMV) to generate a first path metric value; and

A saturating logic to detect a saturating condition when a most significant bit (MSB) of the first path metric value is a specified value and to responsively substitute a predetermined maximum value for the first path metric value. (See Pg. 73, col. 2, the first 2 paragraphs and pg. 75, col. 2, see the Add and PMV Normalization sections).

As per claims 2-5, a comparator to compare the first path metric value or the predetermined maximum value with a second path metric value or the predetermined maximum value transmitted from a second adder, and to responsively select a minimum one of the values;

An accumulator to store the minimum value; and

A multiplexer to select values. (See pg. 75, col. 2, Compare and Select sections).

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As per claims 10-14 and 19-23, these claims are also rejected under the same rationale as set forth in claims 1-5.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-9, 15-18 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Bree et al ("A Bit-Serial Architecture for a VLSI Viterbi Processor" 1988 IEEE pgs. 72-75).

As per claim 6, the teaching of Bree et al had been discussed above. Bree et al does not specifically disclose that the predetermined maximum value is 7h7f. However, it would have been a matter of design choice to a person of ordinary skill in the art, at the time the invention was made, to set the predetermined maximum value to 7h7f as desired if one needed.

As per claim 7, the teaching of Bree et al had been discussed above. Bree et al does not specifically disclose a plurality of additional comparators to compare path metric values. However, Bree et al already disclose a comparator for comparing path metric values. Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to set more than one comparator to compare path metric values so that errors can be detected quickly.

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As per claims 8 and 9, the teaching of Bree et al had been discussed above.

Bree et al does not specifically disclose that the total number of accumulators is equal to a Viterbi trellis depth or equal to 64. However, it would have been a matter of design choice to a person of ordinary skilled in the art, at the time the invention was made, to set the total number of accumulators is equal to a Viterbi trellis depth or equal to 64 as desired if one needed.

As per claims 15 and 24, these claims are also rejected under the same rationale as set forth in claim 6.

As per claims 16 and 25, these claims are also rejected under the same rationale as set forth in claim 7.

As per claims 17-18 and 26-27, these claims are also rejected under the same rationale as set forth in claims 8 and 9.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phung My Chung whose telephone number is 703-305-9686. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phung My Chung
Primary Patent Examiner